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10/563,679	06/09/2006	John Christopher Rudin	20030815-4	1520

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EXAMINER	
GARRITY, DIANA C	

ART UNIT	PAPER NUMBER
2814	

NOTIFICATION DATE	DELIVERY MODE
06/26/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/563,679	RUDIN, JOHN CHRISTOPHER	
	Examiner	Art Unit	
	DIANA C. GARRITY	2814	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 May 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9,12-18,21,22,25 and 26* is/are pending in the application.

4a) Of the above claim(s) *13-18,21 and 22* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9,12,25 and 26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *06 January 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *1/6/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of the Claims

1. Amendment filed February 11, 2008 is acknowledged. Claims 10-11, 19-20, and 23-24 are cancelled. Claims 1-9, 12-18, 21-22, and 25-26 are pending. Claims 13-18 and 21-22 have been withdrawn from consideration. Below is the examination of claims 1-9, 12 and 25-26.

Election/Restrictions

2. Claims 13-18 and 21-22 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Invention, there being no allowable generic or linking claim. Election was made without traverse in the reply filed on May 19, 2008.

Response to Amendment

3. The amendment to the title is acknowledged.

The attorney seems to have misunderstood what I spoke before. I simply told him that I would deal with whatever he gave me. He interpreted what I said as "Accordingly, Applicant understands that, if the common technical feature is added to Group I, the restriction will be withdrawn and the withdrawal of claims 1-12 will be removed." First, claims 1-12 were never withdrawn, and second, I have no intention of ever examining his method. So, here is the paragraph I intend to use.

4. During a phone call with Attorney Bonner, Examiner explained that a single elected invention would be examined, but did not verify that a restriction would be removed if a

common technical feature were added to an unelected invention. Examiner will examine the elected claims to the organic thin film transistor, as indicated by Applicant. The examination of a method of making an organic thin film transistor cannot be included in this application except under the condition of a rejoinder, as explained in the restriction mailed earlier.

Priority

5. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d).

Specification

6. **The title of the invention is not descriptive.** A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Thin-film transistor for use in active matrix display, includes substrate adhered to one of two semiconductor layers comprising respective portions of source and drain electrodes.

Claim Objections

7. Claim 9 is objected to because of the following informalities: given the description of the invention in the specification, it is most appropriate to claim the device of claim 1 *further comprising* an insulating material. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claim 4 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 4 recites the limitation "the passive substrate" in line 2. There is insufficient antecedent basis for this limitation in the claim. Nowhere in claim 1 is reference made to a passive substrate, as opposed a substrate.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1-9, 25 and 26 are rejected under 35 U.S.C 102(b) as being anticipated by Shi et al. (US 6,326,640; hereinafter referred to as Shi).

Regarding claim 1, Shi (Figure 7) teaches a transistor device having a metallic source electrode, a metallic drain electrode, a metallic gate electrode and a channel in a deposited semiconductor material, the transistor device comprising:

a first layer comprising the metallic gate electrode (71), a first metal portion of the metallic source electrode (75, upper half), and a first metal portion of the metallic drain electrode (76, upper half);

a second layer comprising a second metal portion of the metallic source electrode (75, lower half), a second metal portion of the metallic drain electrode (76, lower half), the deposited semiconductor material (74) and dielectric material (72) between the semiconductor material and the metallic gate electrode; and

a third layer comprising a substrate (73), wherein the first, second, and third layers are arranged in an order such that the second layer is positioned between the first layer and the third layer.

Regarding claim 2, The expression "the metallic source electrode, drain electrode, and gate electrode comprising electro-deposited metal" is/are taken to be a product by process limitation and is given no patentable weight. Product by process claim directed to the product per se, no matter now actually made, *In re Hirao*, 190 USPQ 15 at 17 (footnote 3). See *In re Fessman*, 180 USPQ 324, 326 (CCPA 1974); *In re Marosi et al.*, 218 USPQ 289, 292 (Fed. Cir. 1983); *In re Brown*, 459 F.2d 531, 535, 173 USPQ 685, 688 (CCPA 1972); *In re Pilkington,* 411 F.2d 1345, 1348, 162 USPQ 145, 147, (CCPA 1969); *Buono v. Yankee Maid Dress Corp.,* 77F.2d 274, 279, 26 USPQ 57, 61 (2d. Cir. 1935); and particularly *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985), all of which make it clear that it is the patentability of the final structure of the product "gleaned" from the process steps which must be determined in a "product by process" claim, and not the patentability of the process. See also MPEP 2113. Moreover, an old

and obvious patent produced by a new method is not a patentable product, whether claimed in "product by process" claims or not.

Not that Applicant has burden of proof in such cases as the above case law makes clear.

Regarding claim 3, Shi teaches the first, second, and third layers are each of respective substantially uniform thickness (Figure 7 – the three layers are generally the same thickness as shown in the drawing).

Regarding claim 4, Shi teaches that the third layer includes adhesive bonding the substrate to the transistor device (the second layer is attached to the third).

Regarding claim 5, Shi teaches the first layer has a substantially planar surface (See Figure 7, it is substantially planar) comprising substantially planar portions of the source (75), drain (76) and gate (71) electrodes.

Regarding claim 6, Shi teaches the deposited semiconductor material (74) comprises organic semiconductor material.

Regarding claim 7, The expression "the deposited semiconductor material comprises indications that it was deposited from a liquid" is/are taken to be a product by process limitation and is given no patentable weight. Product by process claim directed to the product per se, no matter now actually made, *In re Hirao*, 190 USPQ 15 at 17 (footnote 3). See *In re Fessman*, 180

USPQ 324, 326 (CCPA 1974); *In re Marosi et al.*, 218 USPQ 289, 292 (Fed. Cir. 1983); *In re Brown*, 459 F.2d 531, 535, 173 USPQ 685, 688 (CCPA 1972); *In re Pilkington,* 411 F.2d 1345, 1348, 162 USPQ 145, 147, (CCPA 1969); *Buono v. Yankee Maid Dress Corp.,* 77F.2d 274, 279, 26 USPQ 57, 61 (2d. Cir. 1935); and particularly *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985), all of which make it clear that it is the patentability of the final structure of the product "gleaned" from the process steps which must be determined in a "product by process" claim, and not the patentability of the process. See also MPEP 2113. Moreover, an old and obvious patent produced by a new method is not a patentable product, whether claimed in "product by process" claims or not.

Not that Applicant has burden of proof in such cases as the above case law makes clear.

Regarding claim 8, Shi teaches the semiconductor material (74) is embedded in the device and overlain by the gate electrode (71).

Regarding claim 9, Shi teaches the first layer comprises insulating material (air/physical distance) separating the gate electrode (71) from the source and drain electrode (75 and 76).

Regarding claim 25, Shi teaches a transistor having a metallic source electrode, a metallic drain electrode, a metallic gate electrode and a channel in a deposited semiconductor material, the transistor device comprising:

a first upper planar layer comprising the metallic gate electrode (71), a first metal portion of the metallic source electrode (75, upper half), and a first metal portion of the metallic drain electrode (76, upper half);

a second middle planar layer comprising a second metal portion of the metallic source electrode (75, lower half), a second metal portion of the metallic drain electrode (76, lower half), the deposited semiconductor material (74) and dielectric material (72) between the semiconductor material and the metallic gate electrode; and

a third lower planar layer comprising a substrate (73), wherein fist, second and third planar layers are arranged in order such that the second middle layer is positioned between the first upper layer and the third lower layer,

the gate electrode (71) occupies only the first upper planar layer and the channel (74) occupies only the second middle planar layer, the metallic source electrode (75) consists of the first metal portion of the metallic source electrode overlying the second metal portion of the metallic source electrode, and the metallic drain electrode (76) consists of the first metal portion of the metallic drain electrode overlying the second metal portion of the metallic drain electrode.

The expression "the metallic source electrode, drain electrode and gate electrode comprise electro-deposited metal" is/are taken to be a product by process limitation and is given no patentable weight. Product by process claim directed to the product per se, no matter now actually made, *In re Hirao*, 190 USPQ 15 at 17 (footnote 3). See *In re Fessman*, 180 USPQ 324, 326 (CCPA 1974); *In re Marosi et al.*, 218 USPQ 289, 292 (Fed. Cir. 1983); *In re Brown*, 459 F.2d 531, 535, 173 USPQ 685, 688 (CCPA 1972); *In re Pilkington,* 411 F.2d 1345, 1348, 162 USPQ 145, 147, (CCPA 1969); *Buono v. Yankee Maid Dress Corp.,* 77F.2d 274, 279, 26 USPQ 57, 61 (2d. Cir. 1935); and particularly *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985), all of

which make it clear that it is the patentability of the final structure of the product "gleaned" from the process steps which must be determined in a "product by process" claim, and not the patentability of the process. See also MPEP 2113. Moreover, an old and obvious patent produced by a new method is not a patentable product, whether claimed in "product by process" claims or not.

Not that Applicant has burden of proof in such cases as the above case law makes clear.

Regarding claim 26, Shi teaches the metallic gate electrode (71) contacts the dielectric material (72).

The expression "the metallic source, gate and drain electrodes consist entirely of electro-deposited metal" is/are taken to be a product by process limitation and is given no patentable weight. Product by process claim directed to the product per se, no matter now actually made, *In re Hirao*, 190 USPQ 15 at 17 (footnote 3). See *In re Fessman*, 180 USPQ 324, 326 (CCPA 1974); *In re Marosi et al.*, 218 USPQ 289, 292 (Fed. Cir. 1983); *In re Brown*, 459 F.2d 531, 535, 173 USPQ 685, 688 (CCPA 1972); *In re Pilkington,* 411 F.2d 1345, 1348, 162 USPQ 145, 147, (CCPA 1969); *Buono v. Yankee Maid Dress Corp.,* 77F.2d 274, 279, 26 USPQ 57, 61 (2d. Cir. 1935); and particularly *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985), all of which make it clear that it is the patentability of the final structure of the product "gleaned" from the process steps which must be determined in a "product by process" claim, and not the patentability of the process. See also MPEP 2113. Moreover, an old and obvious patent produced by a new method is not a patentable product, whether claimed in "product by process" claims or not.

Not that Applicant has burden of proof in such cases as the above case law makes clear.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shi (US '640).

Regarding claim 12, Shi teaches the device of claim 1. It would have been obvious to one of ordinary skill in the art at the time of the invention to construct a plurality of these transistors on a single substrate for lower cost of mass production. It is well known in the art to construct more than one transistor on a single substrate, and then singulate respective transistors for individual use.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Noguchi et al. (US 5,183,780) – illustrates a TFT with the same general design as that of the application.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DIANA C. GARRITY whose telephone number is (571) 270-5026. The examiner can normally be reached on Monday-Friday 7:00 AM - 3:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anh Mai can be reached on (571) 272-1710. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Diana C Garrity/
Examiner, Art Unit 2814

/Anh D. Mai/
Primary Examiner, Art Unit 2814